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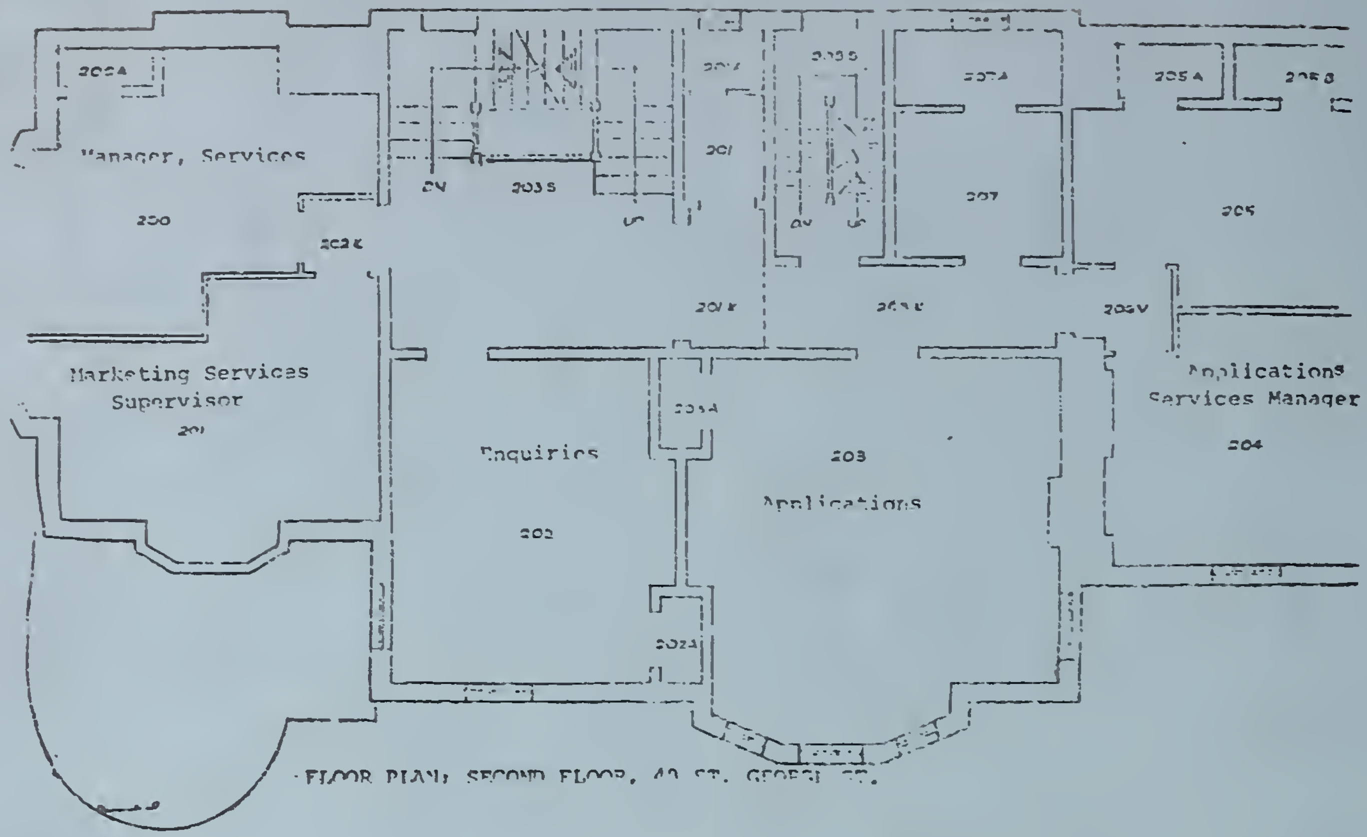

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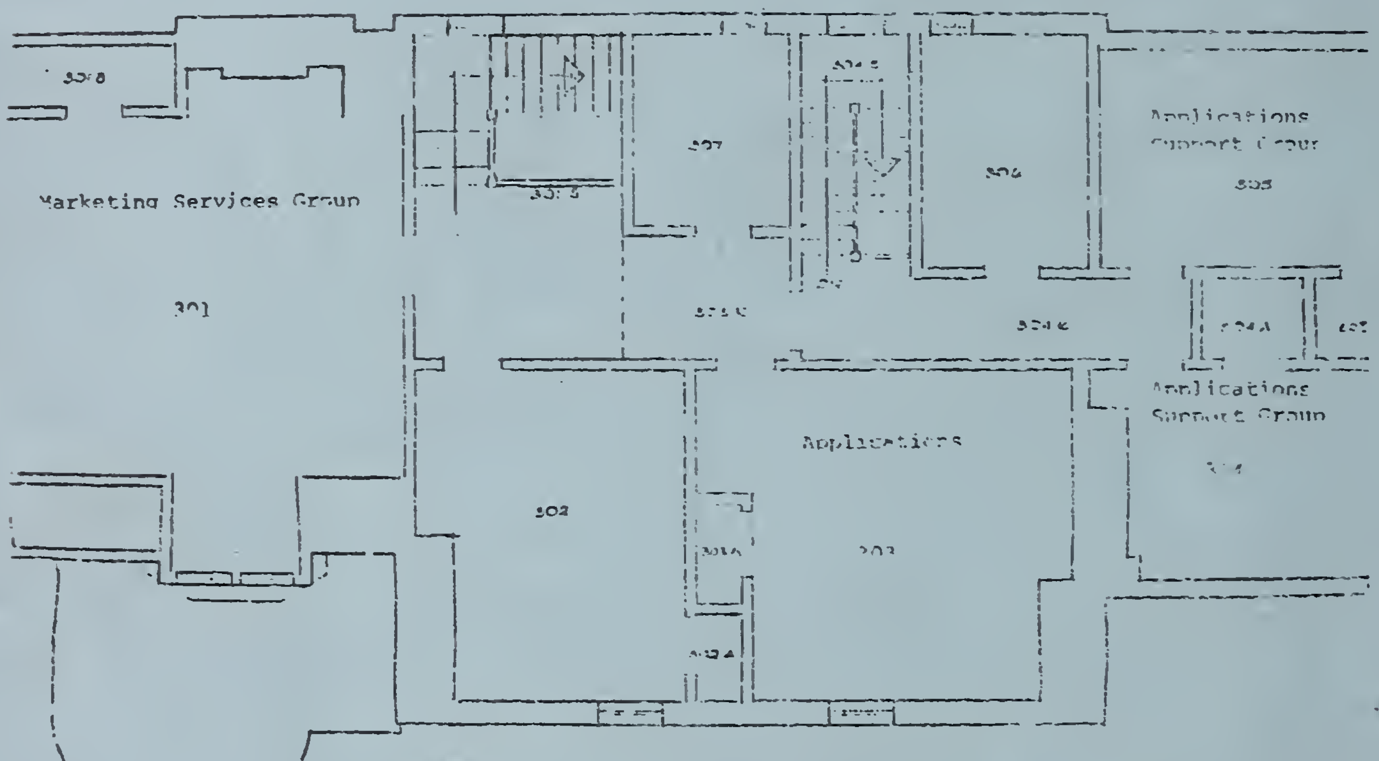

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HOURS OF SERVICE -- CHRISTMAS/NEW YEAR'S PERIOD

UTCC will be open for service on the S/370-165-II and the S/360-65 during the Christmas/New Year's period as shown in the schedules below. Some points are worth noting:

1. From December 24 to January 4 we have standardized the hours on the S/370-165-II to 9:00 - 17:00 including the weekends of December 27/28 and January 3/4. We will return to the usual pattern of weekend hours (10:00 - 18:00) on January 10/11, 1976.

2. On December 29 and 30 which are standard business days at the University, we have chosen to offer service on the S/370-165-II from 9:00 - 17:00 rather than the usual "around-the-clock" operation because the business volume is historically very light on these days.

S/370-165 SCHEDULE

SUN	MON	TUES	WEDS	THURS	FRI	SAT
					19 Normal	20 10-18
21 10-18	22 Normal	23 Normal	24 9-17	25 CLOSED	26 CLOSED	27 9-17
28 9-17	29 9-17	30 9-17	31 9-17	1 CLOSED	2 9-17	3 9-17
4 9-17	5 Normal					

S/360-65 SCHEDULE

SUN	MON	TUES	WEDS	THURS	FRI	SAT
					19 FULL	20 8-20*
21 8-20*	22 9-17*	23 9-17*	24 UNATT	25 UNATT	26 UNATT	27 9-17*
28 9-17*	29 9-17*	30 9-17*	31 9-17*	1 UNATT	2 UNATT	3 8-20*
4 8-20*	5 FULL					

* - Unattended operation outside these hours.

3. Class C service will be available on the S/370-165-II during this period. Class C jobs will be scheduled to run at times when the system is idle between 9:00 and 17:00.

4. On the S/360-65, service is essentially identical to normal production periods except that operators will be on duty from 9:00 - 17:00 on December 22, 23, 27, 28, 29, 30 and 31. Outside this period, the machine will be running in unattended mode.

5. EUT, ASUT and AST will be open as per the S/370-165-II schedule. Users of other batch terminals should contact the Computing Co-ordinators at those sites for any differences in hours of terminal operations.

Should users have any further questions about the service schedules please contact the Operations Supervisors for the S/370-165-II (Paul Scarborough: 928-6220) or the S/360-65 (Kam Jain: 928-7374).

Derry Cox

SIGUCC USER SERVICES CONFERENCE III

Cherry Hill, New Jersey was the site of the third User Services Conference, held November 10-12, 1975. Sponsored by ACM SIGUCC, the objective of the Conference was to continue the successful interchange of ideas begun at User Services Conference I and II. Its theme 'Directions for User Services' attempted to present new approaches for effective and efficient user services to the academic and administrative communities.

The primary goal of ACM SIGUCC (Association for Computing Machinery -- Special Interest Group on University Computer Centres) is to create a forum among educators for the discussion of common problems related to the development and improvement of college and university computer facilities, since it is how the user service functions in a university computer centre that most effectively serves the needs of the user community.

Sessions covered controversial topics such as Directions for User Education. This session illustrated several possible directions that user services departments could examine in the development of improved educational services. Other session topics included Directions for User Services in the Remote Computing Environment, Directions for User Services -- Perspectives and Evaluations, and Staffing the User Services Function. The latter session discussed the major components of a staffing plan for user services. First the service to be provided must be defined and then how to meet the service needs in terms of both quantity and the levels of service can be decided. In order to achieve this task, it is essential that a user services department be able to identify users by category, since the various segments of the user community require different service levels, and by application area. By identifying the segments, it is then possible to determine the desired level of service by user category and application area and the number and skill level of the employees required to provide the service. It was noted, however, that in order to be effective over time, it is necessary to revise the service plan as often as is required to keep the service objectives in focus and to recognize the shifts in user demands.

The closing session of the Conference dealt with user documentation. Its panel members consisted of three dynamic speakers who held their audience with their both informative and entertaining presentations. The panel members included Mr. Stan Yagi, Manager, User Services at UTCC who spoke on USERBOOK: A Modular Approach to the User's Reference Manual. The question and answer period which followed Mr. Yagi's talk indicated that USERBOOK modularity, particularly its distribution system, was unique in its design and had paved the way towards a modular users' reference manual at other computer centres. A brief outline of Mr. Yagi's presentation appears below.

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SIGUCC CONFERENCE III Cont'd.

User Services Conference III -- its well-chosen sessions and the numerous opportunities it offered for informal discussion of common problems and interchange of ideas was enjoyed by all. Indeed, much was gained.

Ruth Borenstein

MORE FROM USER SERVICES CONFERENCE III

Editor's Note: The following article summarizes the speech presented by Stan Yagi, UTCC Services Manager, at User Services Conference III.

USERBOOK was produced in response to a growing demand for a single official reference document which would provide accurate, reliable information on all aspects of computing at UTCC. The original USERBOOK was updated on a regular basis, however, the sheer volume of USERBOOK as more and more material was added to it and the fact that a user had to subscribe to and receive updates to the entire text created numerous problems. It was recognized that each user has different documentation requirements, and, with the objective of providing each user with documentation related to his particular needs, UTCC redesigned USERBOOK to be modular in form.

But, before users could hold selected pieces of documentation on a continuing, updatable basis, it was necessary to develop a database system which would provide a means of identifying users to modules or modules to users.

The basic name and address file for people associated with the University of Toronto Computer Centre is the PIN system or Personal Identification Number system. The file is written in SHARP APL to allow for interactive enquiries and updates. Each person on the file occupies one file component. The PIN system serves as the basis for TUBS -- Toronto USERBOOK System. TUBS is also written in APL and consists of two primary files. The first file contains the various module names, the level of modularity and the modules' left and right links to the modules preceding and following it in alphabetical order within its level. The second file is logically a bit matrice with rows corresponding to PIN numbers, and columns corresponding to the current number of USERBOOK modules.

The advantages to this distribution system are numerous. Quantities of printed material are reduced, thus reducing mailing costs and people-time for handling. Combined mailings can be sent out simultaneously since the system checks for possible combinations that may need to be sent out depending on the individual user's requirements, and finally, the system allows for backordering information to be stored.

Stan Yagi

ACM '75 ANNUAL CONFERENCE MINNEAPOLIS, MINNESOTA

October 20 - October 22, 1975

The Association for Computing Machinery (ACM) is dedicated to the development of information processing as a discipline, and to the responsible use of computers in an increasing diversity of applications.

The theme of the Conference was 'Computers and the Quality of Life' and it was well attended with more than 1600 people present. The schedule was heavy but the topics were varied and there was always something to interest everyone.

Dr. Alan F. Westin of Columbia University gave the keynote address. The topic of this address was "The Next Decade of the Computer Revolution: Privacy, Participation and Power". The presentation generalized the role of computer systems in the past two decades with regards to privacy rights of individuals, patterns of citizen participation in political decision-making, and the distribution of power in our society.

The technical program consisted of more than sixty sessions. There were many informative papers presented as well as interesting panel, tutorial and debate sessions. Only one of the sessions will be covered in this article. Anyone interested in any of the other sessions should contact Ralph Lombardi.

Leon Presser of the University of California was the Chairman for the panel discussion on "Software Management". The objective of the session was to bring the current state of software management into focus and to illuminate possible avenues of progress. This was accomplished by collecting a group of papers that examined the software management from the different viewpoints of Computer Science, Industry, Commerce, Business Administration and Government.

Professor Presser began the session with a series of observations on the state of software management. An important point stated by Presser was that at present the management of software is not carried out in an integrated manner, however, the situation is changing since procurement documents are beginning to address the issue. Professor Presser concluded that he believed computer science is sufficiently mature now to re-evaluate and drastically improve the manner in which software is managed.

Mr. F. Terry Baker of IBM Corporation discussed the current application of modern ideas in the management of production programming. Mr. Baker first outlined three key problems peculiar to programming projects and then offered a solution to the problems. The problems were: 1) programs are treated as private property by programmers 2) programmers get less programming done than they could because they do a great deal of clerical work, and 3) supervision of programming activities is difficult because there are few standards in use. To solve these problems a number of organizations are adopting what is frequently referred to as "improved technology". The nucleus of this new technology is built around structured programming. Coupled

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ACM '75 CONFERENCE Cont'd.

with structured programming is a development support library maintained and operated by a programming librarian and an organization called a chief programmer team.

Mr. George DiNardo of Mellon Bank N.A. examined the impact of the new technology in a commercial environment. In banking, most, if not all the functions, are already automated. Therefore, the job of the programmers is to modify, alter and combine systems to fit changing market demands. Because of this, it is very difficult to use structured programming. Mr. DiNardo stressed the need for improved project management, and took the position that top-down design and chief programmer teams are more important than structured code. He also stated that programming applied to the commercial environment is acquiring better tools and improving the way in which these tools are used.

Col. Richard Thayer made several interesting observations on the evolution of software management in the United States Air Force. In the Air Force the software manager's tools include procedures for administering, documenting, and providing configuration management on software development. Project control using automatic techniques and implementing structured programming on a trial basis is being studied. Future requirements that will be studied are software error collection and analysis, measurable performance criteria and redesign of software review and documentation guidelines.

One of the events that took place at the conference was a Computer Chess Championship, in which twelve programs took part. Sunday evening, David Levy, a chess master who made the famous wager in 1968 that no computer would be able to beat him in a match within the next ten years, played all twelve programs simultaneously. He defeated ten of the programs and was drawn by Chess 4.4 and Tree Frog.

The results of the four rounds of the Chess Championship are summarized below. The University of Toronto's entry was CHUTE 1.2 which placed sixth in a field of twelve programs.

1	CHESS 4.4	W12	W3	W4	W2
2	TREE FROG	W7	W6	W8	L1
3	ETAOIN SHRDLU	W8	L1	W6	W10
4	CHAOS	W10	W9	L1	W5
5	DUCHESS	L9	W11	W7	L4
6	CHUTE 1.2	W11	L2	L3	W9
7	TYRO	L1	W10	L5	W12
8	OSTRICH	L3	W12	L2	D11
9	BLACK KNIGHT	W5	L4	L10	L6
10	WITA	L4	L7	W9	L3
11	IRON FISH	L6	L5	D12	D8
12	SORTIE	L1	L8	D11	L7

Chess 4.4 was second in the 1974 World and U.S. Chess Championships and first in 1970, 1971, 1972, 1973 U.S. Chess Championships. It was sponsored by the Northwestern University and regained its title by defeating Tree Frog.

Tree Frog was sponsored by the University of Waterloo. It was first in the U.S. and Canadian Chess Championships in 1973 and third in the World Championship. The moves made in some of the games are available by contacting Ralph Lombardi.

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ACM '75 CONFERENCE Cont'd.

Anyone having any questions about the ACM '75 Conference should contact Ralph Lombardi at 284-3173.

Ralph Lombardi

A CALL FOR TOPICS AND SPEAKERS FOR THE 7TH ONTARIO UNIVERSITIES COMPUTING CONFERENCE

University of Waterloo
June 2-4, 1976

THEME: APPLICATIONS AND OBJECTIVES

In June 1976, the University of Waterloo Computing Centre will be hosting the 7th Ontario Universities Computing Conference. The tentative programme outline constructed by the Programme Committee addresses 'new' applications which could/should become more widespread in the near future. Anyone with suggestions for speakers or additional topics, or who is involved in applications of computing on his campus which he thinks others would like to know about, is invited to submit them. Please phone or mail suggestions and/or the intention to volunteer as a speaker, by December 15, to:

Roger W. Watt
Programme Chairman, 7th OUCC
Computing Centre
University of Waterloo
WATERLOO, Ontario, Canada N2L 3G1

(519) 885-1211, extension 2183

THE ONTARIO UNIVERSITY COMPUTING CONFERENCE

The Ontario Universities Computing Conference provides faculty, students, staff, and college and universtiy administrators with a forum for the presentation and discussion of topics relevant to college and university computing.

The 1st and 2nd conferences dealt with areas of interest to the staff of the computing installation. The 3rd and 4th explored the impact of the computer on the educational process within the institution and the 5th and 6th dealt with the planning, funding, and managing of the university computing installation and its services.

The 7th Ontario Universities Computing Conference will explore and examine the impact of changing conditions and pressures on the applications of computing to meet the objectives of the academic institution. It will include presentations, discussions, and special-interest sessions addressing this theme in terms of:

- college and university objectives
- current computing applications and their evolution to date to meet these objectives
- plans and desires to extend these applications to better service the functioning or objectives of the institution

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COMPUTING CONFERENCE Cont'd.

- current limitations in the facilities and services, and how they must be resolved to allow for the continued evolution of these applications and the development of future applications.

Conference Format

The majority of the day-time sessions will consist of panel discussions and presentations by computer users who are currently involved in 'new' applications which could/should become more widespread in the near future. Each of these sessions will include time for questions and audience-participation discussion. Tours of local computing facilities, demonstrations of computing services and applications, and informal special-interest discussion sessions will be planned as part of the evening activities.

Suggested Session Topics

ON-LINE ADMINISTRATIVE COMPUTING

This topic is intended to provide the opportunity to present, for example, on-line registration systems and library systems now in operation, and could include problems encountered in development and maintenance of the system, security of access to information, and the expectations of management in using the system information for university planning. How does on-line administrative computing aid the management planning and decision-making process? Is management getting full value from the system? Is it worth the investment in terms of computing and personnel costs?

MULTIPLE COMPUTING SYSTEMS: ARE THEY THE PROBLEM OR THE ANSWER?

On many campuses there exist, in addition to the central computing installation, many smaller computing systems which provide special purpose services to a particular faculty, department, research or instructional group. The motivations for these smaller systems are often quoted as 'local control' and 'economy of specialization', and impressive successes are often realized.

The management aspects of this approach to computing constitute an institution-level issue. Should the planning, funding, acquisition, and operation of these specialized services be controlled by the central computing installation, coordinated by some other central body, or left to the user group to handle as they see fit? Topics for presentation could include funding and financial control, determination of requirements and specifications, and arrangements for maintenance, technical, and user support personnel.

APPLICATIONS OF DISTRIBUTED COMPUTING

When the computers at these multiple on-campus sites start communicating with each other to provide distributed computing services which take advantage of each other's special capabilities, successes which are even more impressive can often be realized. We would like to encourage people who are users of or responsible for distributed computing services to discuss and describe their computer-to-computer systems.

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COMPUTING CONFERENCE Cont'd.

CAI IS A FOUR-LETTER WORD

In recent years great emphasis has been placed on exploiting the benefits of computer-assisted instruction in the educational process (through systems such as COURSEWRITER, APL, PLATO, etc). This topic will provide those who are successfully using CAI, and those who are working on new approaches, with the opportunity to present their system, their objectives, and their future plans.

SHARING DATA AND PROGRAMS

Why doesn't each institution establish a contact person, document each of the packages and databases it has developed or acquired, and distribute the list to all other institutions? Users and potential computer users are still faced with the question of whether a package or database already exists elsewhere and if so how its specifications may be acquired, how contacts can be established, what costs are involved (and why), what level of support can be expected (documentation and consultation) during conversion, implementation, and use, and how to offer in return what they have produced.

INTERACTIVE COMPUTING

On many campuses, terminal and time-sharing systems provide benefits as productivity aids for faculty, staff, and student users. We would like to encourage those who are realizing these benefits to discuss their interactive applications.

COMPUTER-ASSISTED TEST CONSTRUCTION

Computer systems exist for the construction of student examination. Such systems give the instructor a considerable amount of flexibility. Users and/or developers of such systems are invited to discuss them.

COMMUNICATIONS TECHNOLOGY AND DISTRIBUTED COMPUTING

Computer communications are an integral technological component of distributed computing systems, for both user-to-computer and computer-to-computer communications. Current technology and the impact of new advances on the growth of distributed computing systems in the near future could be presented.

FUTURE REQUIREMENTS VS. FUTURE TECHNOLOGIES

Computerization is playing an ever-increasing role as an administrative and educational tool to offset the increasing costs of human services throughout the campus. The explosive technical growth in areas such as special-purpose microcomputers will present alternate approaches to computing which will drastically change current plans for future computing facilities.

Please do not feel constrained or limited in any way by the above outline of suggested topics; they are simply the ones that have been thought of to date. Any topic or presentation relevant to college and university computing can be incorporated.

REPORT: SEPTEMBER MINI COMPUTER USERS MEETING -- WHAT HAPPENED?

A proposal was tabled to consider a standard for mini computer floppy discs. The IBM standard for Floppys was considered particularly suitable, since it was widely used by many floppy disc systems and mini computer manufacturers. A description of the media and recording format can be found in the IBM publication "THE IBM DISKETTE FOR STANDARD DATA INTERCHANGE" which can be obtained from Eugene Siciunas, the authors or IBM. A standard of this type would permit easy and inexpensive data and program interchanges among mini users. (NOTE: If you are planning to buy a floppy, check to make sure it is compatible.) A typical compatible dual drive floppy with interface costs about $4000.

Eugene Siciunas from the University of Toronto Computer Centre (928-4967), gave a presentation on interfacing minis to the IBM 370 from a hardware point of view.

His presentation dealt with asynchronous communication (to TSO, APL, etc.) and synchronous communication (making the mini look like a real IBM peripheral).

The line protocol for asynchronous communication is relativly simple and the hardware requirements are less (typically a comunications board and modem at the mini end which would come to $1000). However, there are two problems with asynchronous communcations - there is no error checking on transmission and the speed is limited to about 30 characters per second, 300 BAUD. (If there is a demand, the Computer Centre could accomodate users at 120 characters per second at an extra tariff for better modems and port utilization). The only additional hardware required is a telephone for calling the IBM 360/370. From the mini's point of view, the software is simple but constrained. The mini must be made to appear as a regular time-sharing terminal to the IBM 360/370. The running cost of asynchronous communication would be that of the regular time sharing charges(about $5 per hour).

Synchronous communication is a more difficult proposition. The line protocol is complex, involves error checking, and runs at a higher speed. As a result, the initial hardware is costlier - about $3500 up for communications board and modems. There is a port charge levied by the Computer Centre of several thousand dollars per year. The software required to emulate an IBM device under BI-SYNCH protocol is difficult. This communications method would be suitable for a high data throughput system, such as a remote job entry station, which could justify the expense.

There seemed to be general agreement that the cost of minis talking to the IBM 360/370 would be quite high. However, several users had implemented and were using communications to the IBM machines.

John Rylaarsdam
John Kornatowski

DECEMBER MINICOMPUTER USERS MEETING

The next Minicomputer Users Meeting will be held on Thursday, December 11th at 2:00 p.m. in the CSRG conference room (room 222 Sandford Fleming Labs). J.N.T. Potvin will talk about "Interfacing Experiments to Mini Computers". BONUS: There will be a demonstration of the S.W.T. $200.00 build-it-yourself computer terminal. All welcome.

For further information, please call John Rylaarsdam - 928-5177 or John Kornatowski - 928-5303.

John Rylaarsdam
John Kornatowski

The following article is reprinted from the University of Toronto Bulletin, No. 13, November 14, 1975.

THE POLLY SYSTEM

Prof. E. C. West of Physics is the system manager of POLLY: a high speed, high resolution computer-controlled film scanning system.

POLLY is the name for both the system and the scanning machine. POLLY-the-scanner and the computer work as a team, and at the same time as the person operating the scanner. 'It is the ability to interact that makes the system go', says Prof. West.

The POLLY system was developed at the Argonne National Laboratory to measure particle tracks on bubble chamber film. A bubble chamber is a device that allows observation of trajectories of charged particles. Every charged particle leaves a trail as it passes through the chamber. Those that are interesting to the scientists have collided with a proton nucleus in the bubble chamber. The collisions, when photographed from three angles on 70, 35 or 16 mm. film, can be read by the computer to give a three-dimensional picture. Typically, an experiment with POLLY involves a million photographs.

The system at U of T was funded originally by a negotiated development grant from the National Research Council. Capital funds were provided by NRC and from University departmental funds. POLLY is now supported by a combination of NRC funds and user's fees for service.

The High Energy Physics Group is in full production now and is POLLY's principal user. Medical Genetics makes some use of POLLY for measurement of DNA molecules. A third project, flow analysis for Chemical Engineering, is still being worked out -- the application of POLLY's talents in this case being very difficult.

The following article is reprinted from the University of Toronto Bulletin, No. 11, October 31, 1975.

THE COMPUTER AND THE OLD ENGLISH DICTIONARY

Prof. A. F. Cameron, a young professor of English at UC, only seven years away from his graduate work at Oxford, is compiling the first dictionary of Old English to be undertaken since Joseph Bosworth began work on his in the early 1880s. What makes Prof. Cameron's dictionary singular is that he is using a computer to compose the basic concordance, and if all goes according to plan, to compile the dictionary as well.

The curious marriage of past, present and perhaps future knowledge which Prof. Cameron is orchestrating from his office, tucked in the midst of the meandering, tri-level hallways of the Robarts Library, is being observed avidly by academics the world over. And yet the project is almost unknown on this University campus.

Cameron explains, 'The real beauty of the project is that it consists of a more or less fixed body of material that's small enough that you can handle it on a computer. At the same time, we can test how best to use computers in making a dictionary.'

The standard dictionary of Old English was begun by Joseph Bosworth in the early 1880s and completed by his successor R.N. Toller in 1898. It contains about 40,000 words, and Cameron's will not contain too many more, although numerous Old English manuscripts have been turned up since the beginning of this century. The difference between the two dictionaries will be in the style of the work and in the use of citations. 'Part of the reason I first thought of doing a dictionary was because, as a student, I found Bosworth and Toller so frustrating to use,' Cameron says. He found the earlier work alternately incomplete and too encyclopaedic.

The thought of using a computer to compile the dictionary came later, at the first of two conferences organized by Cameron and the Centre for Medieval Studies in 1968 and 1970. The response was tremendous. One of the people who became intrigued with the idea was Richard Venezky, of the University of Wisconsin in Madison, a computer scientist with a fascination for linguistics.

'He offered to create a program which would fulfill my specific needs if I would provide him with the raw material.' says Cameron. The program has been devised and the preparatory work is almost completed.

Even with the help of a computer the project has been going full tilt for five years, and by Cameron's own estimate will take 10 more to complete. But to those who are in the know concerning dictionary writing, 15 years is 'an incredibly short time'.

'There's only so much work you can ask the computer to do for you before it begins to be slower than doing it manually,' explains Cameron. And there are many aspects of preparing the dictionary which cannot be done by a computer program at all: for instance, editing the texts against the original manuscripts for spelling errors.

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OLD ENGLISH DICTIONARY Cont'd.

Cameron and his staff, many of whom are graduate students, have spent three years preparing the raw material, the Anglo-Saxon words, for the computer. First they collected Xeroxed microfilm of all known Old English texts and bound them in book form. An unplanned but fortuitous result of this work is that Toronto now has one of the most complete collections of Old English material in the world. Increasingly, other scholars are being attracted here.

After checking against the manuscripts for errors, Cameron's staff typed all known texts on to computer paper, then proof-read their work. This stage is almost completed. 'We're substantially ahead of schedule,' enthuses Cameron.

The computer in Madison then receives the typed transcripts and registers them on magnetic tape. The program created by Venezky instructs the computer to sort out all the different words which appear in the transcripts and to list them alphabetically, in company with each editorial sentence in which the word is used.

What results is a fully annotated concordance. The value of the computer in speeding up the process can best be appreciated by noting that, contained in the approximately 430 Old English manuscripts that have survived, there are almost 45,000 different 'head words', each of which appears many times in various contexts and sentences, to a total of three million words in all.

The full concordance will then be reduced, a task that will take another three years, according to Cameron. The original concordance will be published in microfiche form only; the reduced one will be published as a book. 'Then I, and my co-editor, Christopher Bell from Lincoln College, Oxford, will start to write the dictionary itself,' Camerson says.

Cameron is considering using a computer to assist with the writing stage as well. Paul Bratley and Serge Lusinon, computer scientists at the University of Montreal, have proposed an outline for a program whereby Cameron could do his writing with a screen terminal and a mini-computer. He would type meanings into this, call up the selected citations from the concordance and feed the whole thing together into the computer. From there it could go directly into type.

'Right now everything depends on the money. If we get the money for the computer time, we can stay on schedule,' Cameron says. The Canada Council has been supporting the project since 1970 on one-year, $25,000 grants. The Council is currently considering providing long term support.

'If we don't get any more money, I guess I have everything I need to complete the dictionary by hand.' Cameron motions towards the manuscripts and texts lining the walls of his workroom. 'The only problem then would be that I might not live long enough to complete it.'

And as the Bosworth-Toller work proves, changing authors in mid-dictionary can cause problems for the users.

PERSONNEL CHANGES

Leaving the Centre this month are Ron Thompson and Ian Christie. Ron was one of our marketing representatives and Ian was an Administrative Assistant in the Administration area. Good luck and best wishes to both of you in your new endeavours.

Joining us are Douglas Thompson and David Tritchler. Doug is a computer operator for the Operations area on the S/360-65 and David is our new AST/ASUT Computing Co-ordinator at the Sidney Smith Building in the Services area. On behalf of the Centre, I hope you enjoy your new duties and responsibilities.

Trudy Holland

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

ACM-SIGFIDET Workshop, Ann Arbor, Michigan, May 1974.
Data Description, Access and Control.
New York, ACM, 1974.

Fu, King Sun.
Syntactic Methods in Pattern Recognition.
New York, Academic Press, 1974.

Grinder, John T. and Elgin, S.H.
Guide To Transformational Grammar: History, Theory, Practice.
New York, Holt, Rinehart and Winston, 1973.

International Symposium on Theoretical Programming, Novosibirsk, 1972.
International Symposium on Theoretical Programming, ed. by A. Ershov and V.A. Nepomniaschy.
Berlin, Springer-Verlag, 1974.

Lawson, Charles L. and Hanson, R.J.
Solving Least Squares Problems.
Englewood Cliffs, N.J., Prentice-Hall, 1974.

Nie, Norman H. et al.
SPSS: Statistical Package for the Social Sciences. 2d ed.
New York, McGraw-Hill, 1975.

Prenting, Theodore O. and Thomopoulos, N.T.
Humanism and Technology in Assembly Line Systems.
Rochelle Park, N.J., Hayden Book Co., 1974.

Rozenberg, Grzegorz and Salomaa, A., eds.
L Systems.
Berlin, Springer-Verlag, 1974.

Symposium on Computer Education for Developing Countries, Rio de Janeiro, 1972.
Computer Education for Development, ed. by C. Bussel.
Guanabara, Brazil, Ao Livro Tecnico S.A., 1972.

PL/I CHECKOUT COMPILER UPGRADE

PL/I CHECKOUT compiler will be upgraded to Release 2.2 on Monday, December 1, 1975.

This new release incorporates 126 fixes. As a result of one of these fixes, users specifying a positive value as an argument to the compiler SIZE option may find that their programs will require more main storage. Prior to Release 2.2, such SIZE option specifications resulted in approximately 24K bytes more main storage being made available to the compiler than were actually specified. This has been corrected in Release 2.2 and therefore, users explicitly specifying a positive SIZE value need to increase their specifications by approximately 24K to ensure that the main storage made available to the compiler remains the same.

PL/I OPTIMIZING compiler, when invoked via the TSO PLI command, will be affected only to the extent that 10 of the fixes involve corrections to TSO PROMPTER modules which are common to both CHECKOUT and OPTIMIZING compilers.

Any questions or problems should be referred to Kin Fong at 928-4924.

Kin Fong

S/370-165-II RELIABILITY

The reliability statistics for October indicate an uptime percentage of 97.2 while the average number of IPL's per day reached 1.13. The number of scheduled hours of production for October totalled 499.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Sep/74	94.5	1.83
Oct/74	98.6	1.07
Nov/74	98.9	0.93
Dec/74	97.1	1.21
Jan/75	95.7	2.77
Feb/75	96.0	1.14
Mar/75	96.7	1.10
Apr/75	98.6	0.70
May/75	99.4	0.60
Jun/75	97.4	0.79
Jul/75	95.2	1.23
Aug/75	97.6	0.83
Sep/75	99.1	0.87
Oct/75	97.2	1.13

The percentage breakdown of total system downtime for October was:

Hardware: 656 minutes (77.3%)
Software: 124 minutes (14.6%)
Other : 69 minutes (8.1%)

The major events contributing to these downtime totals were as follows:

October 1 - 60 minutes down - 0 IPLs

a. All time attributed to PARALLEL ADDER checks in the /165 CPU. IBM corrective maintenance did not find a definite problem.

cont'd...

S/370-165-II RELIABILITY Cont'd.

October 6 - 47 minutes down - 4 IPLs

a. 17 minutes charged to "E" unit checks in the CPU. Loading micro diagnostics cleared the problem.

b. 25 minutes due to three system loops on channel "0". No definite problem was found.

c. 5 minutes lost on a double bit error in ITEL memory resulting in an A05 wait.

October 7 - 491 minutes down - 10 IPLs

a. Starting 3:48, numerous 100% Supervisor loops occurred during production and at IPL time. Assurance determined that the problems were not caused by a system change. Channel, CPU and memory diagnostics run during PM by IBM and ITEL did not reveal any problems. Between 8:13 and 11:40 numerous channel errors, double bit memory errors and supervisor machine checks were recorded. IBM and ITEL used 105 minutes of unscheduled maintenance time to rerun channel and memory diagnostics. The second megabyte was varied offline when production was resumed at 11:40, since it was only the the box in which double bit hits were recorded. Subsequent examination of the memory box revealed a faulty power supply. A decision to run 2 megabytes until 10:00 p.m. was made to permit uninterrupted service until that time. The system ran clean to 17:28 when the problems noted earlier in the day reappeared. The system was scheduled down at 18:20. ITEL and IBM were called. The power supply was replaced. Production was resumed at 23:20. There were some questions as to how the power supply on the megabyte varied offline could affect the system. The megabyte shares the same data base with the other 2 megabytes. No channel or memory hits were recorded in logrec after the power supply was replaced.

October 27 - 117 minutes down - 3 IPLs

a. 112 minutes attributed to two occurrences of control unit checks in the 7830 controller attached to channel 4. ITEL engineers replaced defective "chips" on each occasion.

b. 5 minutes due to hung HASP initiation which was caused by a user job requesting an excessive number of "pseudo" devices.

October 28 - 34 minutes down - 4 IPLs

a. 11 minutes charged to extended test time while changes were being made to the new EXECUTOR program.

cont'd...

S/370-165-II RELIABILITY Cont'd.

b. 23 minutes resulted from three HASP CATASTROPHIC errors caused by bad data on the spool volume. The spool was formatted four days later to prevent further problems.

October 30 - 22 minutes down - 3 IPLs

a. 8 minutes to clear an OS initiator hung by a user job.

b. 7 minutes due to an E04 wait caused by a lack of system queue space.

c. 7 minutes charged to a 10 step supervisor loop.

Paul Scarborough

```
                         DOWNTIME_REPORT_ON___S/370__FOR_OCT_75

------------------------------------------------------------------------------------------------------------------------------
|                                                         REIPLS(FREQ) // DOWNTIME (MN)                                      |
|  DAY  REIPL   DNTIME 0    5    10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95   100|
=====================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
| W  1      0      60 |************************************************************
| T  2      0      10 |**********
| F  3      0       0 |
| S  4      1       5 |U****
| S  5      0       0 |
| M  6      4      47 |UUUU*******************************************
| T  7     10     491 |UUUUUUUUUU****************************************************************************************** 491 |
| W  8      1       5 |U****
| T  9      1       5 |U****
| F 10      0       0 |
| S 11      0       0 |
| S 12      0       0 |
| M 13 (CENTER CLOSED)|
| T 14      0       0 |
| W 15      0       0 |
| T 16      1       9 |U********
| F 17      3      15 |UUU************
| S 18      0       0 |
| S 19      0       0 |
| M 20      0       0 |
| T 21      0       0 |
| W 22      1       9 |U********
| T 23      0       0 |
| F 24      1       5 |U****
| S 25      0       0 |
| S 26      1      10 |U*********
| M 27      3     117 |UUU************************************************************************************************* 117 |
| T 28      4      34 |UUUU******************************
| W 29      0       0 |
| T 30      3      22 |UUU*******************
| F 31      0       5 |*****
------------------------------------------------------------------------------------------------------------------------------


LEGEND      : ONE U  =ONE REIPL
              ONE *  =ONE MINUTE OF DOWNTIME


              TOTAL SCHEDULED HOURS OF PRODUCTION :  499
              TOTAL DOWNTIME (MN)  :  849 , AVG/DAY :  28.30 , AVG/PROD HOUR :   0.85
              TOTAL REIPL'S        :   34 , AVG/DAY :   1.13
              DOWNTIME RATE IS     :  2.84 PERCENT OF SCHEDULED PRODUCTION HOURS
```

HSJS MONTHLY STATISTICS

During the month of October, 1975, 239,496 jobs were processed compared with 233,068 for the previous year, an increase of 2.8%.

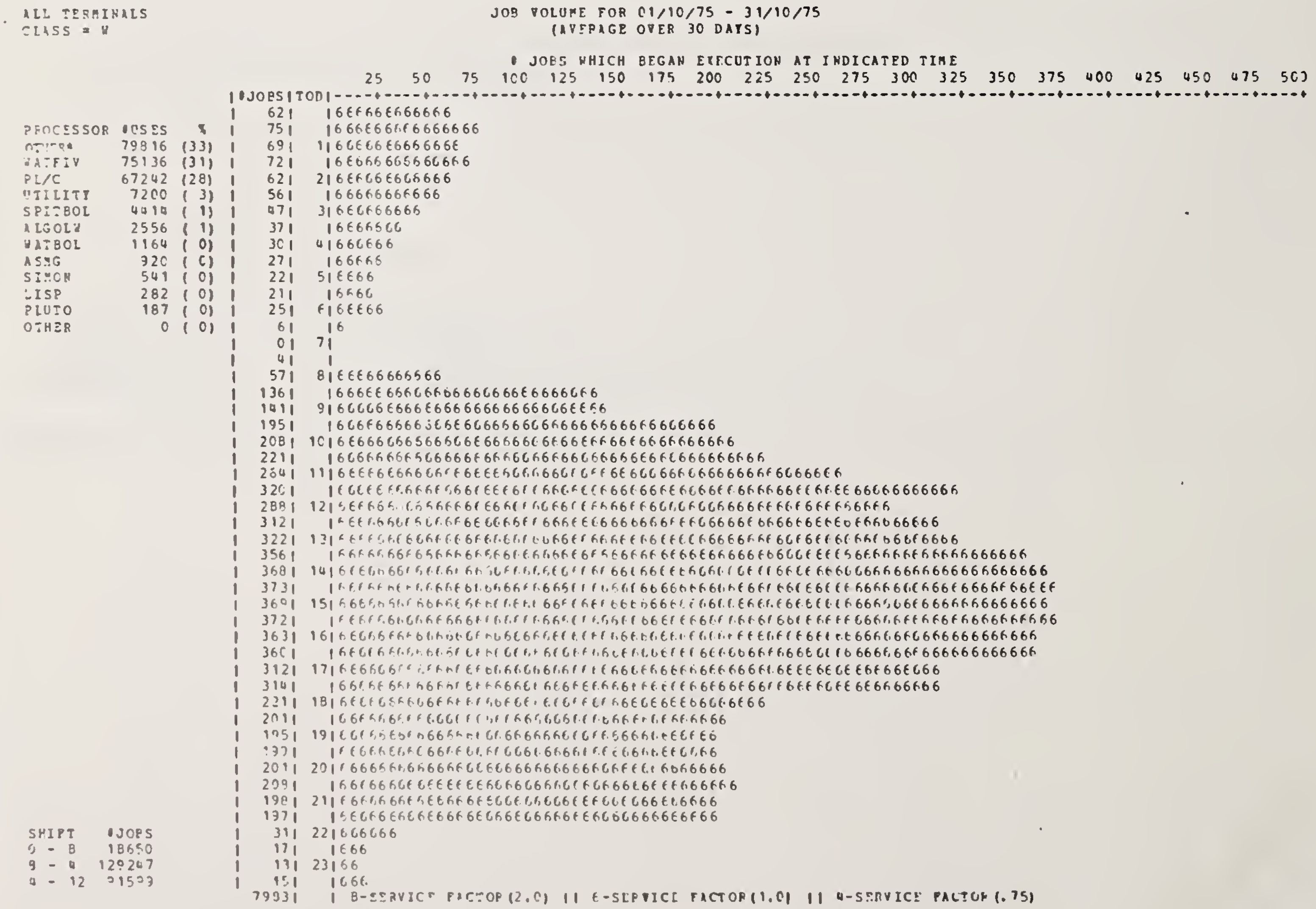
The following charts summarize the HSJS activity for the month of October. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia

```
RESOURCE USAGE BY PROCESSOR

                              ||        TOTAL PER PROCESSOR          ||      AVERAGE PER USE       |
                              ||   CPU    |  #CARDS   |   #LINES     ||  CPU   |#CARDS |  #LINES   |
PROCESSOR  | #USES  %TOTAL   ||  (MIN)   |   READ    |   PRINTED    || (MIN)  ! READ  |  PRINTED  |
--------------------------------------------------------------------------------------------------
OTHER*     | 79816   (33)    ||  627.80  |  4217160  |   8617969    || 0.008  |   52  |    104    |
WATFIV     | 75136   (31)    ||  708.44  |  8308324  |  10386747    || 0.008  |  108  |    136    |
PL/C       | 67242   (28)    ||  859.10  |  5964278  |  12042607    || 0.012  |   88  |    176    |
UTILITY    |  7200   ( 3)    ||   16.48  |   671208  |    975029    || 0.000  |   92  |    132    |
SPITBOL    |  4414   ( 2)    ||   82.50  |   801398  |   1267871    || 0.016  |  180  |    284    |
ALGOLW     |  2556   ( 1)    ||   25.50  |   386044  |    571108    || 0.008  |  148  |    220    |
WATBOL     |  1164   ( 0)    ||    9.85  |   128009  |    179046    || 0.008  |  108  |    152    |
ASMG       |   920   ( 0)    ||   14.32  |   188679  |    181200    || 0.012  |  204  |    196    |
SIMON      |   541   ( 0)    ||    2.06  |    28492  |     49250    || 0.000  |   52  |     88    |
LISP       |   282   ( 0)    ||    3.85  |    36126  |     71811    || 0.012  |  128  |    252    |
PLUTO      |   187   ( 0)    ||    1.10  |    11115  |     17009    || 0.004  |   56  |     88    |
ASSIST     |    38   ( 0)    ||    0.21  |     2676  |      4954    || 0.004  |   68  |    128    |
--------------------------------------------------------------------------------------------------
TOTAL       239496           || 2353.22  | 20743508  |  34364601    || 0.010  |   86  |    143    |

*SP/K, SPSSO and SNAP
```



```
ALL TERMINALS
CLASS = W

PROCESSOR  #USES   %
OTHER*     79816 (33)
WATFIV     75136 (31)
PL/C       67242 (28)
UTILITY     7200 ( 3)
SPITBOL     4414 ( 1)
ALGOLW      2556 ( 1)
WATBOL      1164 ( 0)
ASMG         920 ( 0)
SIMON        541 ( 0)
LISP         282 ( 0)
PLUTO        187 ( 0)
OTHER          0 ( 0)

SHIFT    #JOBS
0 - 8    18650
8 - 4   129247
4 - 12   91599

TOTAL JOBS AT SF .75 (UNAVERAGED)      0        *SP/K, SPSSO and SNAP
TOTAL JOBS AT SF 1.0 (UNAVERAGED) 239496
TOTAL JOBS AT SF 2.0 (UNAVERAGED)      0
TOTAL JOBS AT ALL SF (UNAVERAGED) 239496
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of October for each of APL and ATS were 99.43% and 98.00% of scheduled operation, respectively. The number of scheduled hours of operation during the month of October totalled 487, while the number of unscheduled IPL's per day was 0.17. In addition to the scheduled time, Interactive Terminal Services were also available for approximately 116 hours of unattended weekend operation.

The percentage breakdown of total system downtime for October was: Hardware - 108 minutes (76.06%), Software - 20 minutes (14.08%), Other - 14 minutes (9.86%). Five unscheduled IPL's were required as a result of the failures. The major events contributing to downtime were as follows:

Oct. 6 - Rollin was restarted during maintenance hours due to solid system on test I/O, causing 38 minutes of downtime for ATS.

Oct. 14 - Channel error induced by Hardware technician while installing probes in multiplexor channel in order to monitor system activity.

Oct. 15 - CPU entered solid system state due to numerous seek and data checks on System Residence pack. SYSRES was later moved to alternate drive and IPL was completed successfully.

Oct. 17 - Power failure and problems with disc control unit resulted in 54 minutes of downtime. Several attempts to Re-IPL failed; finally SYSRES was moved to Channel 2 disc drive and normal operations were resumed.

Oct. 21 - A total of 20 minutes of downtime was caused by system programmer while changing APL quantum to 12 seconds.

Oct. 27 - A total of 375 minutes of downtime for ATS was attributed to two separate problems during ROLLIN. Initial problem resulted from an operational oversight when the operator entered 'x' instead of 'c' on the ATS control terminal for continuation of ROLLIN. The second problem was due to tape drive malfunction which ended the ROLLIN, and was immediately restarted on an alternate drive.

Kam Jain

The following table summarizes the time lost out of scheduled hours of production due to system failures for each system:

DATE	DOWNTIME (MINS)		REASON
	APL	ATS	
Mon Oct 6	-	38	Solid System on test I/O (HARDWARE)
Sat Oct 11	18	19	Control terminals locked (HARDWARE)
Tue Oct 14	14	14	* Channel Error (OPERATIONAL)
Wed Oct 15	30	30	* Seek and data checks - SYSRES (HARDWARE)
Thu Oct 16	17	-	APL maint overlapped into production hours (SOFTWARE)
Fri Oct 17	54	54	Problems with disc control unit (HARDWARE)
Mon Oct 20	13	33	Control terminals locked (likely 3705 problem) (HARDWARE)
Tue Oct 27	20	20	* System programmer changing APL quantum (SOFTWARE)
Mon Oct 27	-	375	Operational error and tape drive malfunction
TOTAL	166	583	* IPL required

SYSTEM FAILURES OCTOBER 1 - OCTOBER 31, 1975

ATS ATS/RJE REFERENCE CARD

A pocket-size ATS ATS/RJE Reference Card is now available to UTCC users. The reference card describes Sign-On and Sign-Off procedures, mode, page layout, correction, move, insertion, locate, storage and printout commands as well as the procedures for transmitting and receiving ATS documents. A summary of the commands and procedures used for the UTCC ATS/RJE facility is also included.

ATS ATS/RJE Reference Cards may be obtained from the Information Office SF128 or from the Computing Co-ordinators.

Janet Campbell

DATATALK CHRISTMAS HOLIDAY HOURS

Regular DATATALK hours of service (10 a.m. - 10 p.m., Monday through Friday) will be in effect up until Wednesday, December 25, 1975 and will commence again on Friday, January 2, 1976. No service will be available December 25, 1975 through January 2, 1976 but questions may be recorded for future service by phoning 928-6710.

DATATALK APL DEMOS

DATATALK APL DEMOs will soon be available at no charge from the UTCC Information Office, Room 128, Sandford Fleming Lab.

What is a DATATALK APL DEMO?

1. The DATATALK APL DEMOs are drawn from DATATALK's experience in problem solving at the University of Toronto.
2. They are concise but are intended to be tutorial and fairly elementary. They attempt to explore some facet of an application area for which a basic knowledge of APL can be shown to provide a powerful tool for the analyst.

Depending on the user's interest, DATATALK has enough material to produce at least one new APL DEMO roughly every two months. The following are currently available:

APL DEMO: A demonstration of a language designed for the solution of geometric problems in Civil Engineering

The examples consist of:

- defining a planar geometric structure
- calculating area
- adding additional structure
- APL system commands

Included is a command language reference card and a graphic appendix describing the command language.

cont'd...

APL DEMO: A demonstration of the application of APL to the calculation of descriptive statistics

The examples consist of:

- generating random uniform and normal variates
- calculating descriptive statistics
- calculating frequency distributions and histograms
- calculating correlation coefficients
- performing a T-Test
- function definition of a chi-squared statistic
- APL system commands and format facilities

This discussion of on-line APL facilities for the calculation of statistics is by no means exhaustive.

Programming advice and assistance in accessing these and other APL facilities are readily available from the University of Toronto DATATALK, 928-6710, 10 a.m. - 10 p.m., Monday through Friday.

DATATALK DIALOGUES: POTPOURRI

DATATALK: Good morning, DATATALK services....
C: Oh hi. AHM...could you find the points of intersection of a straight line and a circle for me?
D: Yes. Just a moment...ok.
C: Now, the line is Y=0.2015 X + 607.82 and the circle is at the centre (1000,100) and has a radius of 954.928 miles.
D: Right. I need to know points on the line...so let me take the points (0,607.82) and (-607.82÷0.2015,0).
D: So...one point of intersection is at (221.034, 652.358)...and the other is at...(1504.263, 910.929)...and the distance between them is 1309.02 miles.
C: Oh wow! Great. Thank you.

....

DATATALK: Good morning, DATATALK services....
C: Hi. SMI equals PI divided by P times K-1 divided by 12 minus IS and SM2 equals PI divided by P times K divided by 12 minus IS. Next, alpha equals P divided by 12 times PI times cosine SMI minus cosine SM2....where TS=...Yes?
D: AHM...in the expression for SMI, would you clarify the form of the second factor...?
C: Oh...yes..maybe if I slowed down and put in some parentheses...

....

cont'd...

DATATALK DIALOGUES Cont'd.

DATATALK: Good morning, DATATALK services....
C: Hi. If you're not too busy would you calculate some fixed level payments for me...purely for the sake of comparison?
D: Ok...fine.
C: The amounts are $5,000, $10,000 and $15,000. They are also amortized over 20, 25 and 30 years, each. The interest rate doesen't change; it's 12 per cent per year.
D: Ah...gee...maybe I should define a little function that does that for me..and outputs a table...

Ernst Goetze

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL, SV and TSO services
- 3072K bytes of memory
- 1 drum (2301)
- 13 disk drives (3330)
- 8 disk drives (2314)
- 7 magnetic tape drives (5 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- 24 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL and ATS

7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter

UTCC DIRECTORY

	ROOM	PHONE 928-
DIRECTOR		
John C. Wilson	SF143	6496
ASSOCIATE DIRECTOR		
Al Heyworth	SF116	4936
ADMINISTRATION MANAGER		
Anthony Pieterse	SF137	8948
INFORMATION OFFICE		
General Inquiries	SF128	4990 or 4991
Don Gibson	SF128A	
MANAGER, SERVICES		
Stan Yagi	SG200	7331
SUPERVISOR, MARKETING SERVICES		
Dave Scobie	SG201	6877
TERMINAL CO-ORDINATORS		
Sandford Fleming Terminal		
Mark Tapia	SF125	7109
Program Advisors	SF117	8599
Erindale		
Vaughan Lawrason		828-5311
Scarborough		
Ralph Lombardi		284-3173
Arts and Science		
Marlene Doroney	SS2104	6509
Management Studies		
Paul Roth		4917
SUPERVISOR, APPLICATIONS SUPPORT		
Herb Kugel	SG304	7286
MANAGER, OPERATIONS		
Derry Cox	SF113	7092
MANAGER, SYSTEMS		
Rein Mikkor	SF113	5058
SYSTEM HARDWARE SUPERVISOR		
Eugene Siciunas	SF113	4967
SUPERVISOR, 7094 SERVICES		
William Beasley	NP1207	7094
MANAGER, COMPUTER RESEARCH FACILITY		
Dennis Smith	SF214B	4800
LAB CO-ORDINATOR (CRF)		
Krishna Patnaik	SF207	8858

CONTRACT PROGRAMMING		
Dave Scobie	SG201	6877
ACCOUNTS		
Ann DeFazio	SF139	7148
Wynona Bardgett	SF139	8702
ACCESS CODES		
Yvonne Bowen	SF139	8703
ASSISTANT MANAGER, INFORMATION SYSTEMS TERMINAL		
George Milo		5040

NOTE:

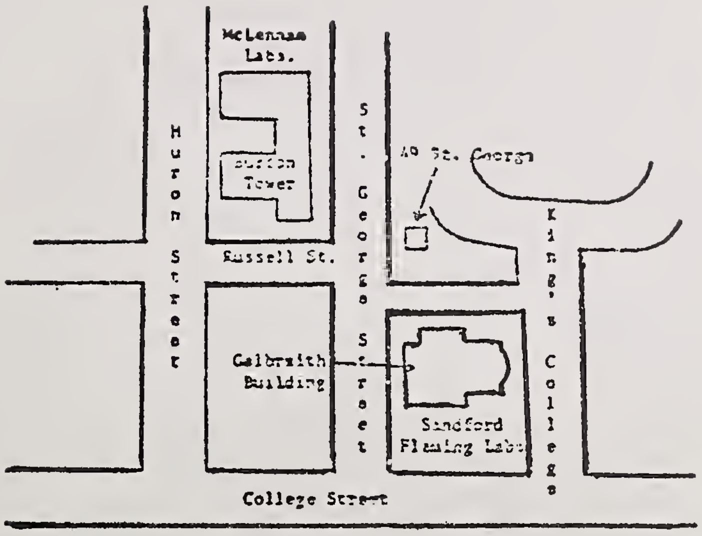
SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

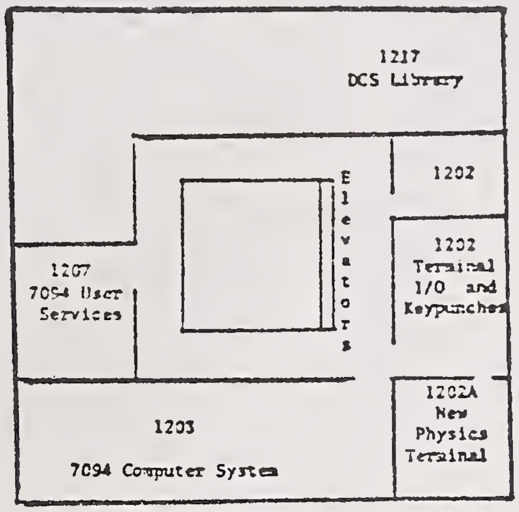
JOB AND SYSTEM STATUS QUERIES

SYSTEM/370, TSO	7373
ATS/APL	6234
7094	7094
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

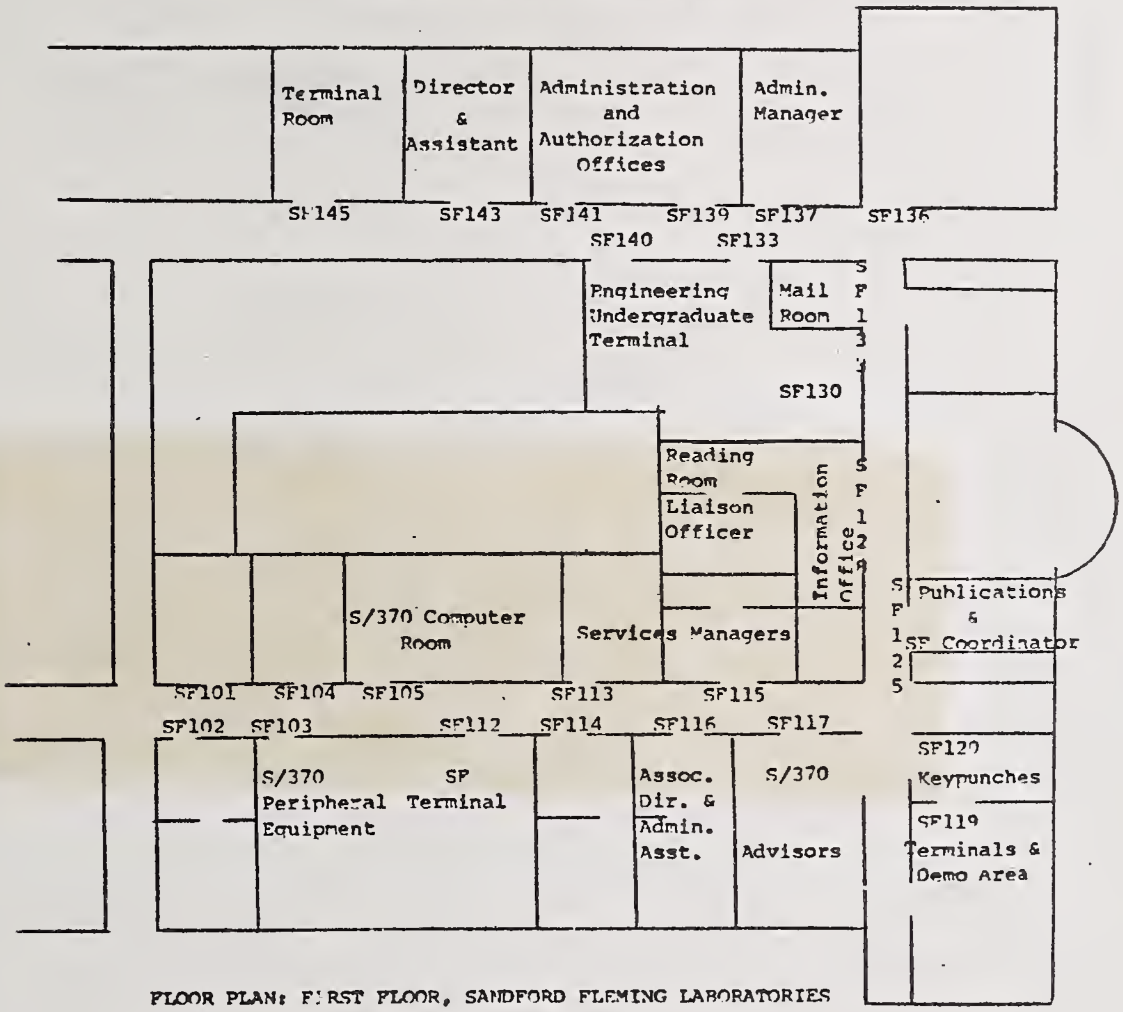
	DIAL-UP	ADVICE
APL - 2741	7200	6710
APL(ASCII)	7200	7107
APL SV - 2741	7239	6710
APL SV - TTY	7447	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710



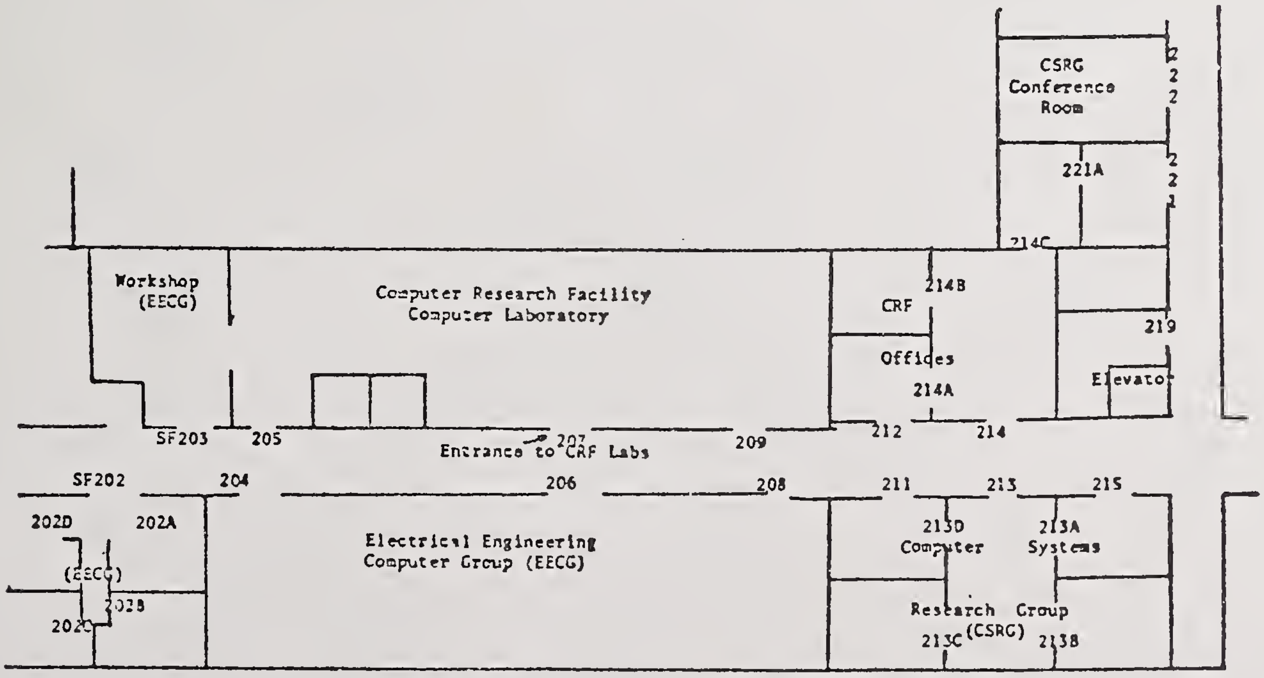


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA,

CAMPUS DELIVER

DR.J.C.WILSON
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